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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,639	07/06/2001	Viswanathan Subramanian	DP-305012	7581

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EXAMINER
MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/900,639	Applicant(s) SUBRAMANIAN ET AL.
	Examiner Eric S. McCall	Art Unit 2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *11-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 22-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

THREADLESS KNOCK SENSOR

FIRST OFFICE ACTION ON THE MERITS

ELECTION

Applicant's election without traverse of claims 1-10 and 22-26 in Paper No. 3 is acknowledged.

ABSTRACT

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the use of the legal phraseology "means" (line 4) therein. Correction is required. See MPEP § 608.01(b).

CLAIMS

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Brammer et al. (6,279,381).

Brammer et al. teach a threadless knock sensor (fig. 1), comprising:

a sleeve (2);

a transducer (6) disposed around the sleeve (col. 1, lines 27-31);

a load washer (4) disposed around the sleeve adjacent to the transducer;

a frusto-conical disk spring (5 & 7) disposed around the sleeve adjacent to the load washer (col. 2, lines 57-59); and

a threadless means (8) for compressing the disk spring against the load washer (ie. element 8 of the prior art does not contain any threads).

With regards to claim 2, the prior art teaches (col. 2, lines 31-34) various embodiments wherein the ring (9) can be screwed on (fig. 4) or fastened by some other way (fig. 1). Accordingly fig. 4 shows threads (17) wherein fig. 1 shows a flare as claimed.

With regards to claim 3, the prior art teaches a spring retention collar (9) press fitted (as shown in fig. 1) around the sleeve above the load washer (4). The disk spring (7) compressed between the collar (9) and the load washer (4).

With regards to claim 4, the prior art teaches the claimed subject matter (15) thereof.

With regards to claim 5, he prior art teaches a lower insulator (4) disposed around the sleeve beneath the lower terminal (5) and an upper insulator (4) above the upper terminal (7).

With regard to claims 6 and 7, the prior art teaches the claimed subject matter thereof (col. 2, lines 21+).

With regard to claims 9 and 10, the prior art teaches the disk spring defining an inner periphery (ie. inside edge of spring in fig. 3) and with at least one slit therethrough (ie. hole in 15 of fig. 3). Also, fig. 2 shows said slit angled with respect to vertical.

With regard to claims 24 and 26, said claims parallel that of claim 1. Thus, the above comments pertaining to claim 1 also apply to claims 24 and 26.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brammer et al. (6,279,381).

With regards to claim 22, Brammer et al. teach an engine knock sensor and thus a method for making such a knock sensor as claimed (see above rejection) except for the disk spring being in contact with the flared end of the sleeve (ie. the first spring retention face) and the load washer (ie. the second spring retention face).

However it would have been obvious to one having ordinary skill in the art armed with said teaching to replace ring (9) of the prior art with a disk spring to thus arrive at the Applicant's invention.

The motivation being that the prior art teaches (col. 2, lines 31-34) that the ring (9) can be screwed on or "fastened in some other way". Thus, the prior art is suggesting that any other know way of holding mass (8) in place may be used wherein the Examiner contends that just such a spring is a well know way of holding a mass in place in the art of knock sensors because a spring is a functional equivalent of a threaded fastener.

RELEVANT ART

The Applicant's attention is directed to the enclosed "PTO-892" form for the prior art made of record and not relied upon but considered pertinent to the Applicant's disclosure.

CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.

Eric S. McCall
Primary Examiner
Art Unit 2855
July 11, 2003